

California Regional Water Quality Control Board
San Francisco Bay Region

Order 87-029

Water Reclamation Requirements for:

Las Gallinas Valley Sanitary District- Reclamation Project
San Rafael
Marin County

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter the Board), finds that:

1. Las Gallinas Valley Sanitary District (hereinafter discharger) submitted a Report of Waste Discharge to the Board on September 15, 1986, for the use of reclaimed wastewater. This Report is for the re-issuance of waste discharge requirements contained in Board Order 80-16, adopted on April 15, 1980.
2. The discharger operates a treatment plant in San Rafael, Marin County, at 300 Smith Ranch Rd. This plant treats up to 5.84 MGD, with an average BOD and suspended solids levels of 20 mg/l. The average dry weather flow is 2.6 MGD. The plant is a tertiary treatment plant, with trickling filters, fixed film nitrification, and deep bed filters. The plant discharges into Miller Creek, a tributary of San Pablo Bay, a water of the state and the U.S., but cannot meet a 10:1 initial dilution during the summer.
3. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), adopted on July 21, 1982, prohibits the discharge of "(a)ny wastewater which has particular characteristics of concern to beneficial uses at any point where the wastewater does not receive a minimum initial dilution of at least 10:1 or into any nontidal water, deadend slough, similar confined water, or any immediate tributary thereof. (Page 4-4).
4. The Basin Plan allows for exceptions to the prohibitions referred to in Finding 3. above when it can be demonstrated that:
 - a. An inordinate burden would be placed on the discharger relative to beneficial uses protected and an equivalent level of environmental protection can be achieved by alternate means, such as an alternative discharge site, a higher level of treatment, and/or improved treatment reliability, or
 - b. A discharge is approved as part of a reclamation project (Page 4-4)

5. An exception to the prohibitions referred to in Finding 3 is warranted because the discharge is approved as part of a reclamation project, and because an equivalent level of environmental protection for 10:1 dilution can be provided because the facility provides a tertiary effluent. The plant also provides improved treatment reliability during the discharge period when the receiving water does not provide 10:1 dilution.
6. The discharge period is from September 1 to June 1, and is covered by a separate order (NPDES CA0037851, Order 85-45). During the discharge period, wastewater may be discharged from either the treatment plant or the wildlife pond.

During the dry weather season, June 1 to August 31, all wastewater is reclaimed by spray irrigating pasture land owned by the discharger. The plant effluent is not sent through nitrification or the deep bed filters, but it is routed through a 20 acre wildlife marsh (48 million gallons), two 20 acre storage ponds (97 million gallons). A ten acre saltwater marsh, open to tidal action, was developed as a mitigation for the loss of wetlands. The storage ponds contain all treated effluent generated during the no-discharge period. The wildlife pond is primarily managed for wildlife benefit with possible late summer storage during cool summers.

7. Plant effluent flows from the storage ponds to 5 irrigation pumps, and is transferred to 5 center-sprigot and corner spray units. The spray units are on an automatic timer, and irrigate a total of 200 acres of pasture land, and 20 acres of landscaping. The pasture land is leased to a farmer, who lets non-dairy cattle graze on a 15-day rotating cycle. There is the capability to transfer water between any of the 3 ponds, the outfalls, and the treatment plant if needed. The water in the three ponds is continuously circulated.
8. The beneficial uses of Miller Creek and San Pablo Bay are:
 - a. Cold and warm freshwater habitat (creek only)
 - b. Wildlife habitat
 - c. Preservation of rare and endangered species
 - d. Fish migration and spawning
 - e. Water contact and non-contact recreation
 - f. Commercial and sport fishing, including shellfish harvesting
 - g. Marine habitat
 - h. Estuarine habitat
 - i. Industrial service supply
 - j. Navigation

9. The discharger is currently subject to waste discharge requirements contained in Order No. 80-16, adopted by the Board on April 15, 1980.
10. Section 13523 of the California Water Code provides that the Regional Board may, after consulting with and receiving the recommendation of the Department of Health Services and determining that such action is necessary to protect the public health, safety, and welfare, prescribe water reclamation requirements for water which is used or proposed to be used as reclaimed water.
11. The wastewater reclamation requirements are in conformance with the statewide reclamation criteria established by the State Department of Health Services, as prescribed in Title 22, Section 60355, California Administrative Code.
12. Adoption of revised waste discharge requirements is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 2100 et. seq.) pursuant to Section 13389 of the California Water Code.
13. The discharger and interested persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided with the opportunity to submit their comments.
14. The Board, at a properly-noticed public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, that the discharger shall comply with the following:

A. Reclaimed Water Use Restrictions

1. No reclaimed water shall be applied to the disposal area during the wet weather season (November 15 through April 15). Reclaimed water may be applied during the remainder of the year, except when the ground is saturated or during periods when rainfall or runoff from adjacent land can occur.
2. No waste shall be allowed to escape from the discharger's property into waters of the State via surface flow, airborne spray or resurfacing after percolation.

3. Reclaimed water shall not be injected into any fixed irrigation system connected to a domestic water supply.
4. Use of reclaimed water on areas not shown on the map which is attached to this order (Attachment A) is prohibited without written authorization from the Executive Officer.
5. Waste shall not be applied within 25 feet of any ephemeral stream or within 100 feet of any other stream, pond (excluding wastewater storage pond), well, or housing.
6. Persons shall be effectively excluded from the areas where reclaimed water is applied.
7. The use of reclaimed water under provisions of this order shall be limited to irrigation of fodder, fiber, and seed crops or discharge to the wildlife pond.
8. The discharge of water other than domestic wastewater is prohibited.

B. Reclaimed Water Quality Specifications

1. The wastewater as discharged from the treatment and storage facilities to the pasture spray irrigation area shall meet the following effluent quality limits at all times:

BOD	40 mg/l monthly average
Dissolved oxygen	1.0 mg/l minimum
Dissolved sulfide	0.1 mg/l maximum
pH	6.0 minimum. 9.0 maximum
Coliform organisms	Median MPN shall not exceed 240 organisms per 100 ml at some point in the treatment system (median value to be obtained from last 5 samples). The MPN of a single sample shall not exceed 10,000 organisms per 100 ml, when verified by a repeat sample taken within 48 hours

2. Waste within one foot of the surface of the wildlife and storage ponds shall meet the following quality limits at all times:

In any grab sample: dissolved sulfide 0.1 mg/l max
 dissolved oxygen 2.0 mg/l min
 pH 6 to 9

3. The discharger shall discontinue use of reclaimed water during any period in which there is reason to believe that the limits specified in B.1 are not being met.

C. Provisions

1. This order supercedes Order 80-16, which is hereby rescinded.
2. The discharger shall comply with all sections of this order immediately upon adoption.
3. The discharger shall promote and encourage increased reclamation to reduce the amount of discharge to Miller Creek during the period of September 1 to May 31.
4. The treatment, storage, or disposal of waste shall not create a nuisance, as defined in Section 13050(m) of the California Water Code
5. The disposal of waste shall not cause degradation of groundwater suitable for domestic water supply or cause an increase in any quality parameter that would render groundwater unsuitable for irrigation use.
6. A minimum freeboard of two feet shall be maintained in the storage and wildlife ponds at all times.
7. The storage ponds shall be protected against erosion, washout, and flooding from a flood having a predicted frequency of once in 100 years.
8. Milking animals shall be excluded from the wastewater disposal area. Sufficient time should be provided between application of reclaimed water and grazing by non-milking animals to allow the wastewater disposal area to dry thoroughly.

9. The wastewater disposal area and any equipment used to transport wastewater shall be clearly identified with warning signs to inform the public that wastewater is present, and that this water is unfit for human consumption.
10. Ninety days prior to the commencement of wastewater reclamation, the discharger shall submit to the Board: maps showing areas to be irrigated, maps showing all wells, and plans as to how these wells will be protected.
11. Fail-safe treatment shall be provided, including back-up power facilities as needed, to assure continuous compliance with these requirements.
12. Wastewater ponding which could provide a breeding area for mosquitoes shall be prevented.
13. Sludges and other solids removed from liquid wastes shall be disposed of at a legal point of disposal and in accordance with the provisions of Division 7.5 of the California Water Code. For the purposes of this requirement, a legal point of disposal is defined as one for which waste discharge requirements have been prescribed by a Regional Board and which is in full compliance therewith.
14. Reclaimed water shall be applied so as to minimize accumulation of water in the ditch system. Discharge of tailwater collected in the ditch system shall be prohibited from June 1 to August 31, except under written authorization of the Executive Officer. Such authorization shall be granted only on a demonstration by the discharger that discharge is necessary for the control of a nuisance condition, or to maintain the agricultural operations, and that beneficial uses of receiving water will be protected.
15. If someone other than the discharger is responsible for the schedule for applying reclaimed water, then the discharger shall inform that person or persons of these requirements, in a written agreement or other suitable manner.
16. In reviewing compliance with requirements A.1 and D.5, the Board will take special note of the difficulties which may be encountered in achieving compliance during entire wet seasons having a rainfall recurrence frequency greater than once in ten years.

17. In accordance with Section 13267(c) of the California Water Code, the discharger shall permit the Board or its authorized representative:
 - a. Entry upon premises in which an effluent source is located or in which any required records are kept
 - b. Access to copy any records required to be kept under terms and conditions of this order
 - c. Inspection of monitoring equipment of records
 - d. Sampling of any discharge
18. The discharger shall comply with the self-monitoring program as adopted by this Board and as may be amended by the Executive Officer.
19. The discharger shall file with the Board a report of waste discharge at least 120 days before making any material change in the character, location, or volume of the discharge.
20. The Board will review this Order periodically and may revise the requirements when necessary.

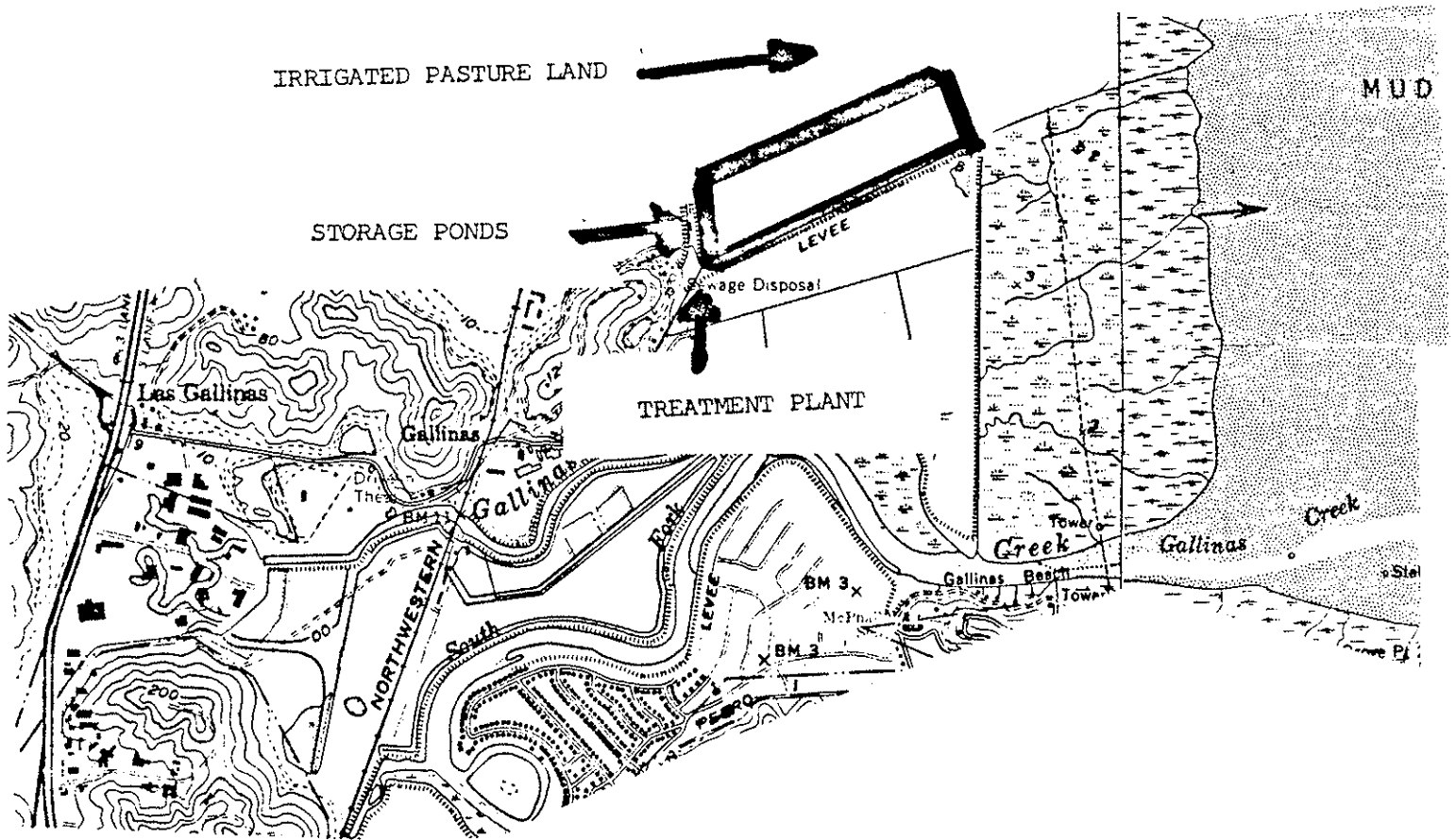
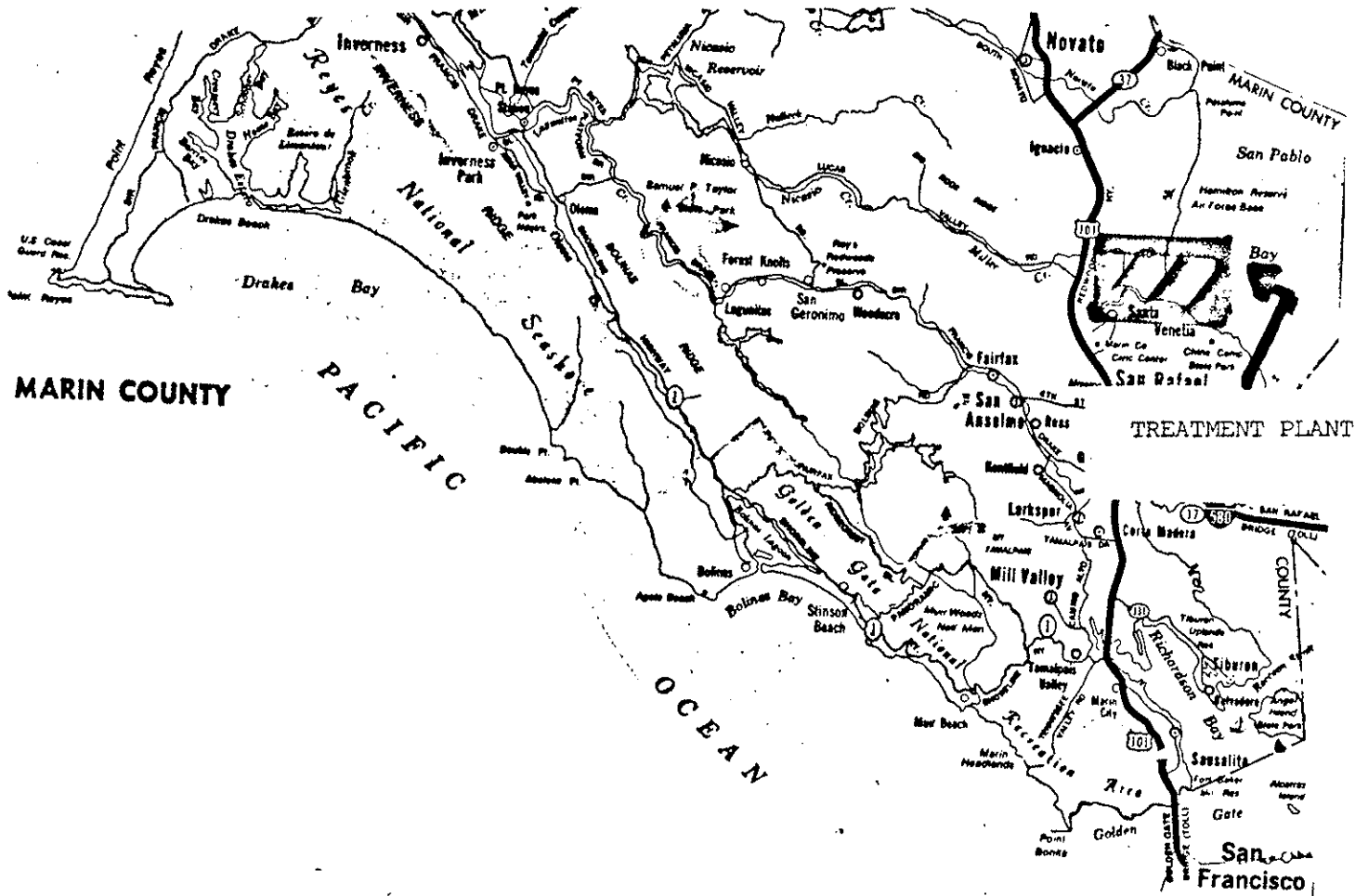
I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 15, 1987


ROGER B. JAMES
EXECUTIVE OFFICER

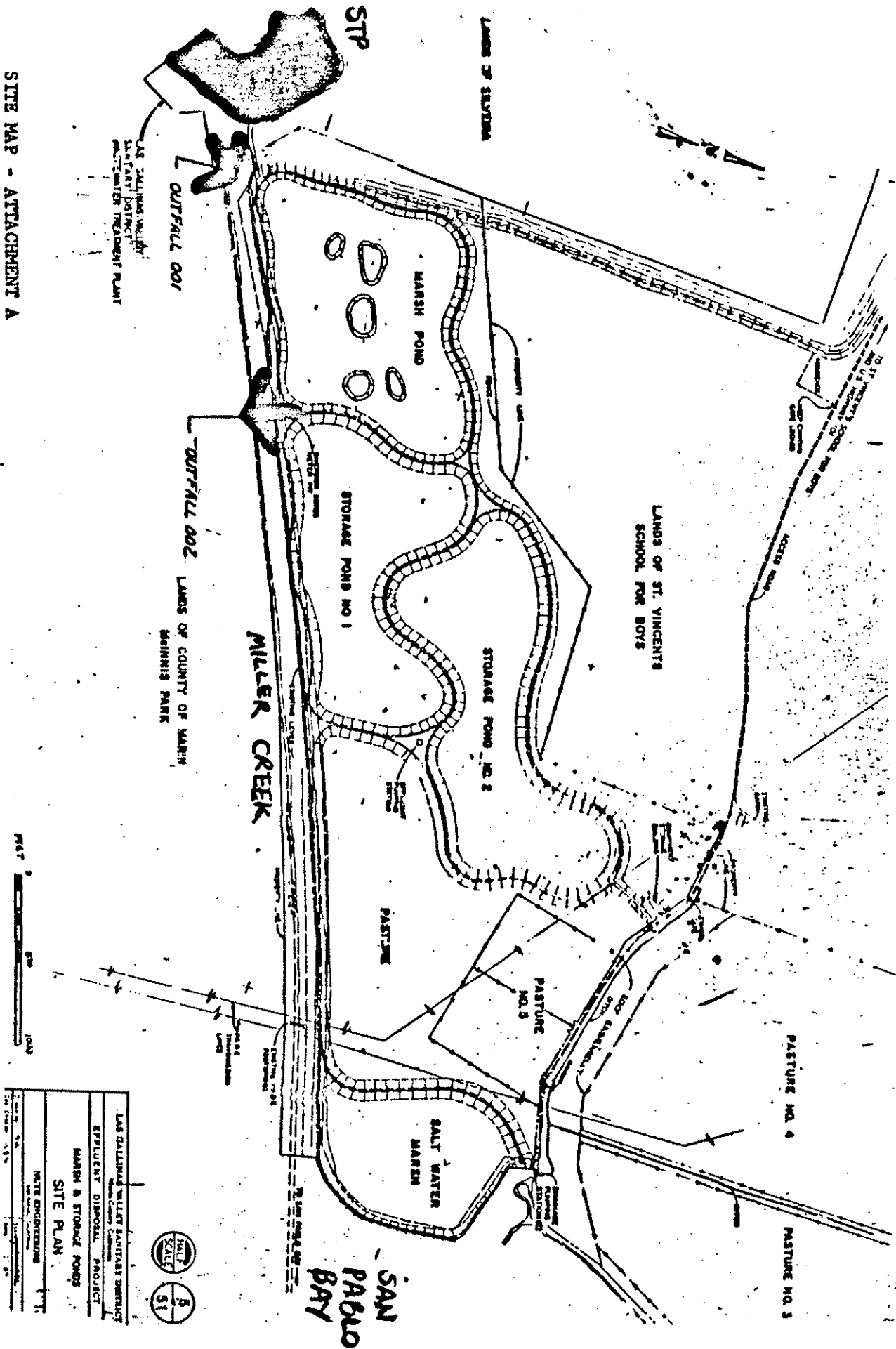
Attachments:

Map & Self-Monitoring Program

LOX ION MAP _ LAS GALLINAS
VALLEY SANITARY DISTRICT



SITE MAP - ATTACHMENT A



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

FINAL
SELF-MONITORING PROGRAM
FOR

LAS GALLINAS VALLEY SANITARY DISTRICT
WASTEWATER RECLAMATION,
SAN RAFAEL, MARIN COUNTY

CONSISTS OF

PART A

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

PART A

I. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16.

The principal purposes of a monitoring program by a waste discharger, also referred to as self-monitoring program, are:

1. To document compliance with waste discharge requirements and prohibitions established by this Regional Board.
2. To facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge.

II. DESCRIPTION OF SAMPLING AND OBSERVATION STATIONS

A. Effluent

<u>Station</u>	<u>Description</u>
E-001	At any point in the plant outfall following all treatment and prior to discharge (to ponds or reclamation). (1)
E-002	At the point where treated wastewater enters the wildlife pond. (3) May be the same as E-001 if plant effluent is discharged directly to wildlife pond.
E-003	At the point where treated wastewater leaves the wildlife pond. (3)
E-004	Water column sampling location in the wildlife pond that is at least 500 feet from the pond inlet or outlet and having a representative depth. (3)
E-005	At any point in storage pond 1 where a representative sample of treated wastewater can be obtained. (3)
E-006	At any point in storage pond 2 where a representative sample of treated wastewater can be obtained. (3)

E-007

At any point in the reclamation system immediately prior to reclamation (by spray irrigation).⁽²⁾

- (1) Sampling required only during the period June 1 to August 31.
- (2) Sampling required whenever reclamation occurs, may extend beyond the June 1 to August 31 period.
- (3) Sampling required year-round.

B. L Stations

Pond levee stations are to be located at the corners and midpoint of each pond.

Annual reports and self-monitoring reports shall contain a map or maps clearly showing the location of these stations.

III. SCHEDULE FOR SAMPLING AND OBSERVATIONS

See Table 1 and attached notes.

IV. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Violations of Requirements

In the event the discharger is unable to comply with the conditions of the water reclamation requirement and prohibitions due to:

- (a) maintenance work, power failures, or breakdown of waste treatment equipment, or
- (b) accidents caused by human error or negligence, or
- (c) other causes such as acts of nature,

the discharger shall notify the Regional Board Office by telephone as soon as he or his agents have knowledge of the incident and confirm this notification in writing within two weeks of the telephone notification. The written report shall include pertinent information explaining reasons for the noncompliance and shall indicate what steps were taken to prevent the problem from recurring.

2. Self-Monitoring Report

Written reports shall be filed with the Regional Board on the 15th of every month. The reports shall specifically cover each applicable point in the monitoring program. Any violations shall be clearly identified, and actions taken or planned for correcting violations shall be included. Monitoring reports shall be signed by the District Manager or his duly authorized representative.

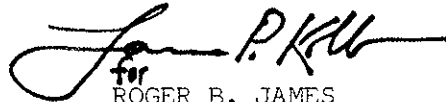
The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true and correct.

3. Annual Report

An annual report summarizing the use of reclaimed water shall be submitted to the Board by December 1 of each year. This report shall contain a summary and analysis of the water quality data from the effluent stations. The report shall also contain a list of all violations of requirements in the previous season.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 80-16.
2. Is effective on the date shown below.
3. May be reviewed at any any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer.


for
ROGER B. JAMES
Executive Officer

Effective Date

4/21/87

Attachment: Map

1

Sampling Station	E-001	E-002	(1) E-003	(2) E-004	E-005 (3) E-006	E-007	L
TYPE OF SAMPLE	C-24 G	C-24 G	G	G	G	C-24 G	O
Flow Rate (mgd)	D					(4) D	
BOD, 5-day, 20°C, or COD (mg/l & kg/day)	3/W	2W	2W				
Chlorine Residual (mg/l)	cont or 2H			(5) E			
Settleable Matter (ml/l-hr.)						W	
Total Suspended Matter (mg/l & kg/day)		2W	2W				
Oil and Grease (mg/l & kg/day)	M						
Coliform (Total) (MPN/100 ml) per req't	(6) 5/W						
Fish Tox'y 96-hr. Surv'l in undiluted waste	M						
Ammonia Nitrogen (mg/l & kg/day)		M	M				
Nitrate Nitrogen (mg/l & kg/day)		M	M				
Nitrite Nitrogen (mg/l & kg/day)							
Total Organic Nitrogen (mg/l & kg/day)							
Total Phosphate (mg/l & kg/day)							
Turbidity (Jackson Turbidity Units)							
pH (units)		5/W	5/W	2W	M		
Dissolved Oxygen (mg/l and % Saturation)		5/W	5/W	2W	M		
Temperature (°C)		5/W	5/W	2W	M		
Apparent Color (color units)							
Secchi Disc (inches)							
Sulfides (if DO<2.0 mg/l) Total & Dissolved (mg/l)				2W	M		
Arsenic (mg/l & kg/day)	Q						
Cadmium (mg/l & kg/day)	Q						
Chromium, Total (mg/l & kg/day)	Q						
Copper (mg/l & kg/day)	Q						
Cyanide (mg/l & kg/day)	Q						
Silver (mg/l & kg/day)	Q						
Lead (mg/l & kg/day)	Q						

TABLE 1 (continued)

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	E-001		E-002		(1) E-003		(1) E-004		E-005 (2) E-006		E-007		L
TYPE OF SAMPLE	C-24	G	C-24	G		G		G		G	C-24	G	O
Mercury (mg/l & kg/day)	Q												
Nickel (mg/l & kg/day)	Q												
Zinc (mg/l & kg/day)	Q												
Phenolic Compounds (mg/l & kg/day)													
All Applicable Standard Observations													(7) 2/W
Bottom Sediment Analyses and Observations													
Total Ident. Chlor. Hydro- carbons (mg/l & kg/day)													
Unionized Ammonia (mg/l and kg/day)			M			M							
Biological Monitoring													(8) 2/Y

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
 C-24 = composite sample - 24-hour
 C-X = composite sample - X hours
 (used when discharge does not
 continue for 24-hour period)
 Cont = continuous sampling
 DI = depth-integrated sample
 BS = bottom sediment sample
 O = observation

TYPES OF STATIONS

I = intake and/or water supply stations
 A = treatment facility influent stations
 E = waste effluent stations
 C = receiving water stations
 P = treatment facilities perimeter stations
 L = basin and/or pond levee stations
 B = bottom sediment stations
 G = groundwaters stations

FREQUENCY OF SAMPLING

E = each occurrence
 H = once each hour
 D = once each day
 W = once each week
 M = once each month
 Y = once each year

2/H = twice per hour
 2/W = 2 days per week
 5/W = 5 days per week
 2/M = 2 days per month
 2/y = once in March and
 once in September
 Q = quarterly, once in
 March, June, Sept.
 and December

2H = every 2 hours
 2D = every 2 days
 2W = every 2 weeks
 3M = every 3 months
 Cont = continuous

Table 1 Notes

1. No sampling at station E-003 is required when wastewater enters and leaves the wildlife pond at the same point. (This may occur when storage pond levels are too low to allow reclaimed water to be pumped from the storage ponds to the spray irrigation area.)
2. Water column samples should be taken at one foot intervals starting at the surface.
3. Pond samples should be taken one foot below the surface.
4. The discharger will also record daily flow of any discharge of irrigation tail water from the ditch system to waters of the State (in addition to complying with item C.6. in Order 80-16).
5. The discharger shall sample for chlorine residual at station E-004 whenever sampling at station E-001 shows a chlorine residual greater than 0.5 mg/l.
6. The median value for the last five analyses shall be used to determine compliance with the 240 MPN/100 ml requirement. Any single value of 10,000 MPN/100 ml occurring for any two consecutive samples shall be reported as a violation.
7. Pond dike station observations should include:
 - (i) Pond freeboard (weekly)
 - (ii) Dike condition
 - (iii) Evidence of seepage through the dike
 - (iv) Scum or aquatic plant growth on the pond surface, if any.
8. Biological monitoring applies only to the wildlife pond. It will include vegetation mapping and an aquatic invertebrate inventory, as described in the Wildlife Management Plan for the Las Gallinas Valley S.D. Effluent Disposal Project. Initial monitoring will be performed during the project's first year of operation, and twice per year after that.